

Claims

1. Steering wheel having a padding (24), a grip surface (27) at least partly covering the latter, and a heating element (4) arranged between the padding (24) and the grip surface (27), and comprising an electrically conductive layer (41) with a meandering contour along a direction of lengthwise extent of the heating element (4), **characterized in that** the heating element (4) is cropped from an endless segment and in that the electrically conductive layer (41) at its apical segments (45) is widened in each instance compared to a connecting segment (48).
2. Steering wheel according to claim 1, **characterized in that** the electrically conductive layer (41) is an integral constituent of the heating element (4) exhibiting a meandering contour.
3. Steering wheel according to claim 1 or 2, **characterized in that** the meandering contour of the heating element (4) includes an undulating profile.
4. Steering wheel according to claim 1, **characterized in that** the meandering contour of the heating element (4) includes a rectangular, saw tooth or triangular profile.
5. Steering wheel according to any of claims 1 to 4, **characterized in that** apical segments (45) of the electrically conductive layer (41) running in a meandering contour, and/or the heating element (4), comprise a rounding radius (46).
6. Steering wheel according to any of the preceding claims, **characterized in that** the envelope of the apical segments (45) arranged on one side of the direction of lengthwise extension of the heating element (4) overlap, said apical segments (45) themselves each remaining distanced from each other.

7. Steering wheel according to any of claims 1 to 5, **characterized in that** the envelopes of the apical segments (45) arranged on either side of the direction of lengthwise extension of the heating element (4) are distanced from each other.

8. Steering wheel according to any of the preceding claims, **characterized in that** a heating element (4) runs around the entire circumference of the steering wheel.

9. Steering wheel according to any of claims 1 to 7, **characterized in that** the heating element (4) runs around a peripheral segment of the steering wheel (2), cutting out a lower segment (28) between preferred hand grip positions (25, 26).

10. Steering wheel according to any of claims 1 to 7, **characterized in that** two heating elements (4) are provided, each arranged in a circumferential segment of a preferred hand grip position (25, 26).

11. Steering wheel according to any of the preceding claims, **characterized in that** the heating element (4) comprises at least two layers (41, 42) connected to each other.

12. Steering wheel according to claim 11, **characterized in that** the electrically conductive layer (41) is applied to an insulating support layer (42) and connected thereto.

13. Steering wheel according to claim 11 or 12, **characterized in that** the insulating support layer (42) consists of synthetic material, in particular polyurethane foam.

14. Steering wheel according to any of the preceding claims, **characterized in that** the electrically conductive layer (41) comprises copper or a copper alloy, in particular a copper alloy containing tin.

15. Steering wheel according to any of claims 1 to 13, **characterized in that** the electrically conductive layer (41) comprises aluminum and/or an aluminum alloy.

16. Steering wheel according to any of the preceding claims, characterized in that the electrically conductive layer (41) is vapor deposited on the insulating support layer (42).

17. Steering wheel according to any of claims 1 to 15, **characterized in that** the electrically conductive layer (41) is applied to the insulating support layer (42) galvanically or by sputtering.

18. Steering wheel according to any of the preceding claims, **characterized in that** the electrically conductive layer (41) comprises a greater thickness of material of metallization of the electrically conductive layer (41) at each of its apical segments (45) than the linear or slightly curved connecting segments (28).

19. Steering wheel according to any of the preceding claims, **characterized in that** the electrically conductive layer (41) comprises several contacting locations (43) for connection of supply lines (61).

20. Steering wheel according to claim 19, **characterized in that** the contacting locations (43) each comprise a thickening in the form of a widening and/or a greater thickness of material of the metallization of the electrically conductive layer (41).

21. Steering wheel according to claim 19 or 20, **characterized in that** each heating element (4) comprises two electric contactings (6).

22. Steering wheel according to claim 21, **characterized in that** at each electric contacting (6) an electrically conductive cable connection (62) is provided.

23. Steering wheel according to claim 21 or 22, **characterized in that** the contactings (6) are made in the form of riveted connections.

24. Steering wheel according to claim 21 or 22, **characterized in that** the contactings (6) are made in the form of soldered or bonded connections.

25. Steering wheel according to claim 21 or 22, **characterized in that** the contactings (6) are made in the form of welded connections.

26. Steering wheel according to any of the preceding claims, **characterized in that** the heating element (4) is bonded under the outer grip surface (27) of the steering wheel (2) onto the padding or foaming (24) of the steering wheel rim (21).

27. Steering wheel according to any of the preceding claims, **characterized in that** the heating element (4) is bonded onto an inside of the outer grip surface (27) of the steering wheel (2), applied to the padding or foaming (24) of the steering wheel rim (21).

28. Steering wheel according to any of the preceding claims, **characterized in that** the outer grip surface (27) comprises essentially natural or artificial leather.

29. Steering wheel according to any of claims 11 to 28, **characterized in that** the insulating support layer (42) comprises a thickness of material between 30 and 200 microns.

30. Steering wheel according to any of claims 11 to 28, **characterized in that** the insulating support layer (42) comprises a thickness of material between 50 and 80 microns.

31. Steering wheel according to any of claims 11 to 30, **characterized in that** the electrically conductive layer (41) comprises a thickness of material of 50 microns maximum.

32. Steering wheel according to any of claims 11 to 30, **characterized in that** the electrically conductive layer (41) comprises a thickness of material of 20 microns maximum.

33. Steering wheel according to any of claims 11 to 30, **characterized in that** the electrically conductive layer (41) comprises a thickness of material of 10 microns maximum.

34. Steering wheel according to any of the preceding claims, **characterized in that** the heating element (4) is adapted to a preassigned diameter and a preassigned thickness of the steering wheel rim.

35. Heating element according to any of claims 1 to 34, in particular for an electrically heatable steering wheel (2) for motor vehicles.